Litter on beaches in Northern Ireland 2014

KEEP NORTHERN IRELAND BEAUTIFUL

MARINE SURVEY

Executive summary

This report summarises the main findings of a survey of litter found on fourteen reference beaches around Northern Ireland between September 2012 and January 2015 using the OSPAR methodology. Four surveys were undertaken annually, with ten carried out in total.

In 2014, an average of 5,332 items of litter was observed per kilometre (items/km). This is higher than the 3,498 items/km in 2013 and the average of 4,421 items/km for all ten surveys undertaken to date.

Eighty percent of the litter items observed were made of plastic, with another 6% made of metal and another 4% sanitary waste such as cotton buds.

The three most common types of litter in 2014 were:

1. pieces of plastic over 2.5cm (approx. 1 inch) in length with 875 items/km
2. pieces of plastic under 2.5cm at 719 items/km
3. string and cord, the source of which is usually attributed to the fishing industry, at 555 items/km

Other abundant items observed included plastic drinks bottles, bottle tops and sweet wrappers, tin cans and fast food containers. These are items frequently bought together, and are also among the most common items in terrestrial litter in Northern Ireland[1]. Collectively they number almost 1,200 items/km.

The results make clear that the beaches next to the fishing harbours were significantly more affected by litter than the rest of the coastline of Northern Ireland. In 2014 around two and a half times as many items/km were observed on these beaches than elsewhere (7,739 items/km against 3,321 items/km). However, much of this litter was generic litter, not much different to that found on other beaches. Litter from fishing and other maritime activities added up to around 1,200 items/km on these beaches, less than one in six of the items observed.

In 2014, an average of

5,332

items of litter was observed per kilometre

Across the ten surveys to date, the north coast of Northern Ireland was less affected by marine litter than the east coast. Along the north coast an average of 3,533 items/km were observed, while along the east coast the figure was 4,776 items/km. However, if fishery harbours are excluded the east coast falls to 3,374 items/km.

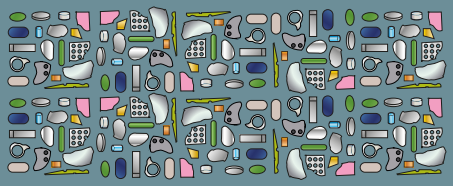
The main focus of the report is the period between April 2014 and January 2015, as this is the most recent reporting period. The rest of the report reviews the results of all surveys to date.

PLASTIC
SANITARY
METAL
OTHER

Plastic/polystyrene pieces > 2.5cm

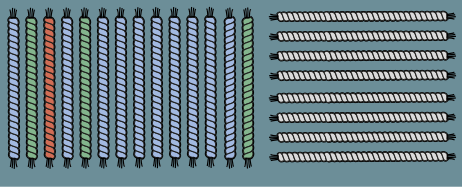
16.4%

Plastic/polystyrene pieces <2.5cm



13.5%

String and cord – diameter <1.0cm



10.4%

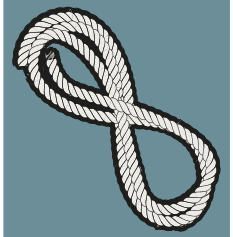
Drinks (bottles, containers, drums)

8.0%

Wrappers (crisps, sweet, lolly, sandwich)

3.7%

Rope – diameter >1.0cm



3.7%

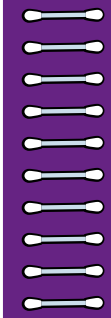
All others

30.1%

Caps and lids

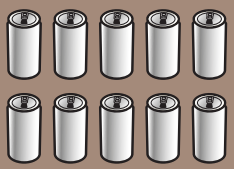
5.4%

Cotton bud sticks



3.4%

Drink cans

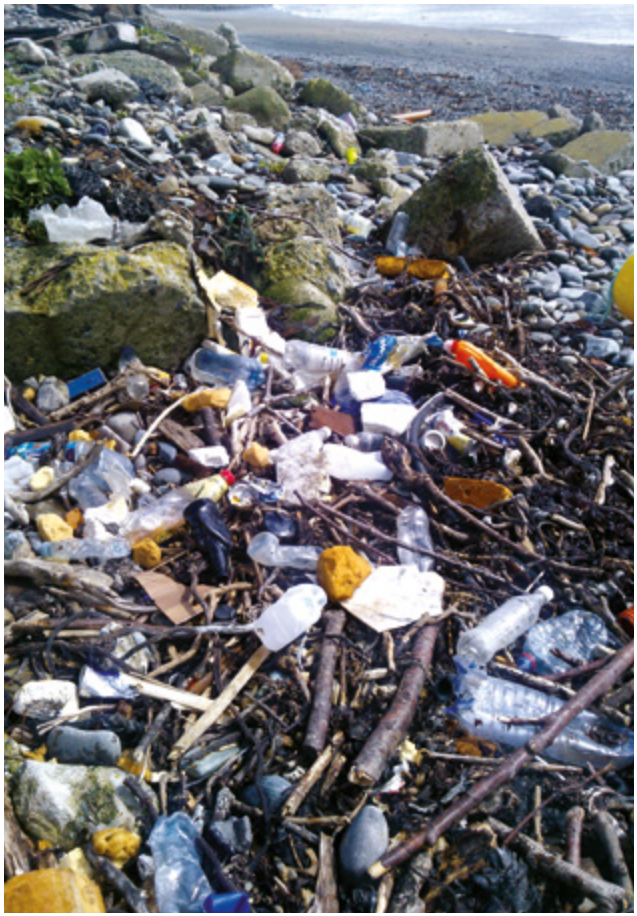


3.2%

Food (fast food pots, tubs, sachets)

2.2%

Foreword



An abundance of litter, predominantly plastic bottles, washed up on Kilkeel beach, one of the 14 beaches used for the Northern Ireland Marine Litter Survey.

Information collected on the number and type of litter items found on Northern Ireland's shores is growing and the picture it paints is not a pretty one – unless you mean pretty awful!

Most people don't drop litter, but the few who do are certainly creating a bad impression. We found over 5,000 items of litter for every 1,000 metres surveyed. That's five items of litter for every step along your favourite beach! Put it another way; the coastline of Northern Ireland is about 650km long, so at any single point in time we could find around 3,250,000 items of litter waiting to welcome us on our day out at the beach.

It is thought that four out of every five items comes from the land. That means it comes from all of us. Of course much of what gets washed up here will have come from somewhere else, whilst our crisp packets, cotton buds, plastic bottles and cans will find their way onto some other country's beach. But that's no excuse to litter.

Littering is killing our wildlife, it is costing us millions of pounds and it has got to stop. We cannot afford to keep on trashing our environment. The solution is simple: we have to start using a bin or taking our rubbish home.

Thankfully, as I said earlier, most people don't drop litter. And many people are now helping clean up where they live. They are from schools, families, local businesses and community groups and they have picked up every item of litter from our survey areas, four times a year, whatever the weather. They really do live here and love here, and are showing it by going the extra mile.

As a small nation we have a great opportunity to get it right. With just one small change in what we do with our rubbish we can make a massive difference to our own experience of this wonderful place we call home. And with that will come more tourists who will also enjoy the clean and green places as befits our world class coastline.

In turn that is good news for local businesses and job creation. We have joined local councils, Tourism Northern Ireland and the Department of the Environment in a campaign called 'Live Here Love Here' which supports communities in working toward this ideal. Join the movement to make a difference – visit **www.liveherelovehere.org** and show your support for a litter free Northern Ireland.

Dr. Ian Humphreys
Chief Executive
Keep Northern Ireland Beautiful

You can download the full report from our website at www.keepnorthernirelandbeautiful.org/marinelittersurveys.aspx

Contents

Marine litter and the Marine Survey

Marine litter

Measuring litter at sea is very difficult. However, the United Nations Environment Programme estimates that 6.4 million tonnes of litter enters the ocean each year creating a costly international litter problem. Indeed, marine litter has been included in the G7 action plan for 2015 and highlighted by UN Environment Programme as a priority for the period 2012-2016, putting it in the same category as the dumping of raw sewage into the sea or destruction of coral reefs.

Between 2001 and 2007 the OSPAR pilot study of marine litter in the North East Atlantic – found an average of more than 6,000 items of marine litter per kilometre on beaches around what was termed the 'Celtic Seas' around the island of Ireland, the west coast of Scotland, the coast of Wales and the north coast of Cornwall[2].

Most litter is deposited in the North East Atlantic during autumn and winter. By contrast, the North Sea experiences its maximum deposition during the spring[3].

Where does it come from?

Around 80% of marine litter starts out on land[4], and the rest comes from activities at sea. Once in the sea, many plastics, that do not sink to the seabed, can travel great distances by wind and tides. Litter washed into local seas from rivers and streams, or picked up by rising tides on beaches may therefore be carried great distances, or end up on a beach only a short distance from where it entered the sea.

How do we measure it?

Beginning in September 2012, fourteen beaches were chosen based on their location, profile and ease of access for cleaning. Popular visitor beaches were not considered as the litter there would be affected by both visitors leaving terrestrial litter and the actions of local authorities in cleaning them. On each reference beach a 100m section was measured and every piece of litter within that zone was counted, using the internationally-recognised OSPAR method. Once the litter has been counted volunteer groups collect it for responsible disposal by the land owner.

What does this report cover?

This report focuses on two periods. The first part of the report refers to the four surveys carried out in the calendar year 2014, as this is the agreed reporting period for marine litter under the Marine Strategy Framework Directive (MSFD). In this section we identify points of note on individual beaches, or within our defined survey areas.

The second part of the report includes a summary of the work undertaken to date, which covers the period from September 2012 to January 2015, and gives a brief an analysis."

Table 1: The annual survey schedule

Survey	Completion date
Winter	January
Spring	April
Summer	July
Autumn	October

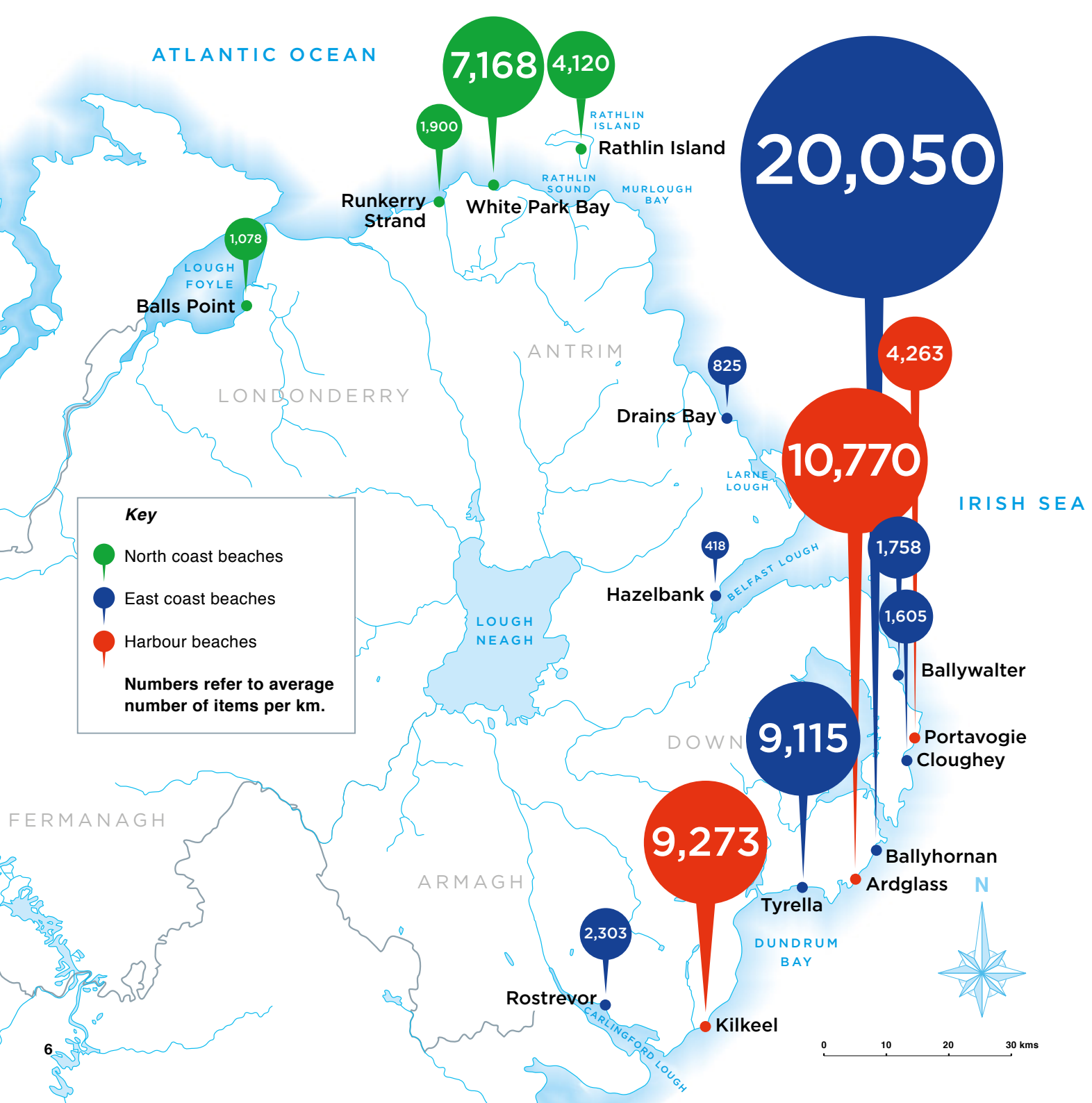
The contribution of volunteers

We gratefully acknowledge the work of volunteer groups in the completion of the Marine Litter survey. Although the surveys were all managed and overseen by Keep Northern Ireland Beautiful staff, many were done with the assistance of a small group of trained volunteers. In addition, a fundamental element of the survey was to remove as much of the litter as possible to preclude double counting. Hundreds of school children; students; parents; bankers; staff from McDonald's, Coca-Cola and other businesses; fishermen and many others assisted with this task over the ten survey windows, volunteering 3,281 hours of their personal time and removing around 14,500 kilograms of litter from the 14 reference beaches. Their efforts have not only contributed to the accuracy of this survey, but have improved the local environment on each of the reference beaches.

What is OSPAR?

OSPAR is the mechanism by which fifteen Governments of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the North-East Atlantic. It started in 1972 with the Oslo Convention against dumping. It was broadened to cover land-based sources and the offshore industry by the Paris Convention of 1974. These two conventions were unified, up-dated and extended by the 1992 OSPAR Convention. OSlo and PARis: OSPAR.

A surveyor assesses a tangle of rope, pieces of fishing net and bits of cloth washed up on a beach. Tangles such as this can trap fish, small birds or invertebrates.


ATLANTIC OCEAN
7,168
4,120
1,900
RATHLIN ISLAND
Rathlin Island
RATHLIN SOUND
MURLOUGH BAY
Runkerry Strand
White Park Bay
20,050
1,078
LOUGH FOYLE
Balls Point
ANTRIM
LONDONDERRY
825
Drains Bay
4,263
10,770
LARNE LOUGH
IRISH SEA
418
Hazelbank
BELFAST LOUGH
1,758
1,605
LOUGH NEAGH
Ballywalter
DOWN
9,115
Portavogie
Cloughey
FERMANAGH
9,273
Ballyhornan
Ardglass
ARMAGH
Tyrella
N
2,303
DUNDRUM BAY
Rostrevor
Kilkeel
CARLINGFORD LOUGH
Key
North coast beaches
East coast beaches
Harbour beaches
Numbers refer to average number of items per km.
0
10
20
30 kms

Marine Survey beaches 2014

Table 2: Volunteer groups by beach 2014

Beaches surveyed and the volunteer groups who cleaned them	Total volunteer hours	Bags of litter collected	Estimated kilograms of litter
Balls Point *Translink*	159.0	95	570
Runkerry Strand *CITO Geocachers; Include Youth*	338.0	306	1,836
White Park Bay *Friends of White Park Bay*	144.0	100	600
Rathlin Island *Rathlin Island Community and Development Association; Volunteer Now*	178.0	110	660
Drains Bay *BASE Ballymena; Larne YMCA; Roddensvale Special School*	263.5	247	1,482
Hazelbank *McDonald's Abbey Centre; CITO Geocachers; Translink*	317.0	140	840
Ballywalter *Ballywalter Action Group; Include Youth; CITO Geocachers*	167.0	100	600
Portavogie *Portavogie Action Group*	175.0	63	378
Cloughey *Cloughey and District Community Association*	404.0	160	960
Ballyhornan *Ballyhornan Residents Association; NI Environment Agency; St Patrick's Grammar School*	164.0	144	864
Ardglass *Ardglass Festival Association; McDonald's Downpatrick*	184.0	215	1,290
Tyrella *McDonald's Downpatrick; St Joseph's Primary School; Translink*	143.0	108	648
Kilkeel North *Mourne Heritage Trust; CITO Geocachers; Citi Belfast; Power NI*	502.5	520	3,120
Rostrevor *Kilbroney Residents Association*	142.5	102	612
Total	**3,281.5**	**2,410**	**14,460**

Results and conclusions for 2014

Amounts and types of litter observed

Plastic is the dominant material in marine litter – four out of five pieces of the litter observed in 2014 were made of it, averaging out at 4,263 items/km. Pieces of plastic only a few centimetres long and not discernible as anything in particular make up almost one third of all litter items. See **Table 3** for more detail.

Around one in ten of the items observed was a piece of string or cord. These are usually brightly coloured and easy to see, and are generally attributed to the fishing industry. They are produced either when fishing boats repair or replace their nets, or when nets that have been 'lost' begin to break down, resulting in the creation of many small pieces of line filament.

Our 24/7 eat and drink on the go lifestyle is reflected in marine litter. Plastic drinks bottles and caps, metal drinks cans and crisp and confectionery wrappers between them make up one in five of the litter items observed on beaches.

Cotton buds were the most frequently observed type of sanitary litter in 2014, although over half of these were noted in the winter survey. As the major component of sewage related debris observed around Northern Ireland, their presence on a beach indicates inappropriate disposal such as flushing them down the toilet, and potentially issues with waste water treatment.

Pieces of fishing net and line, plastic bags and balloons and their string have all been shown to harm marine life, sometimes through a mechanism called 'ghost fishing'[5].

Large items such as oil drums and pallets are surveyed over one kilometre because they are much less common than smaller items, so a bigger search area is needed to provide meaningful data. These surveys counted items that were more than 50cm (20inches) along one axis. An average of 156 large items/km was observed, of those 42 were industrial gloves and 28 bits of rope and string, while 10 were clothing.

'Ghost fishing' is the term used for lost or abandoned fishing gear that continues to catch fish and other sea life such as turtles, seals and whales. The fish caught is wasted.

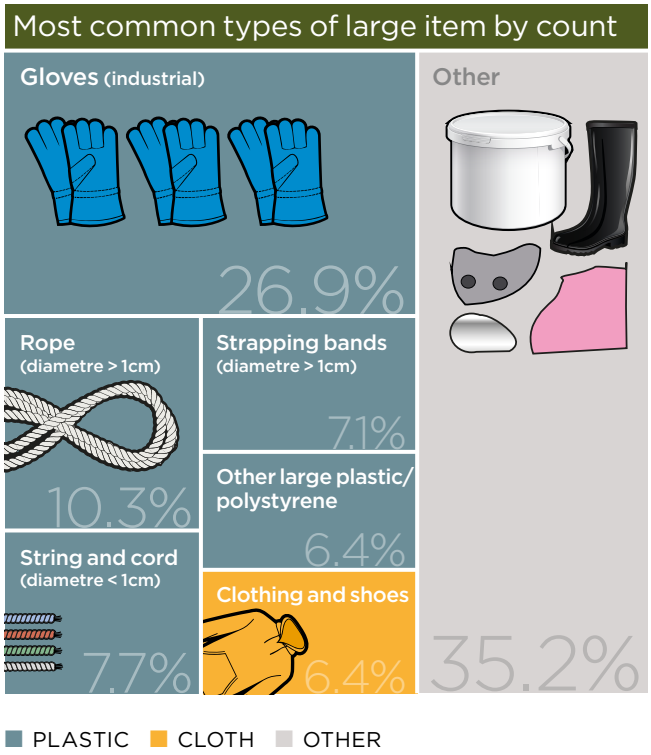


Table 3: Comparison of the 2014 survey windows

Winter had the highest number of items observed, with levels of plastic pieces more than twice that in any other window. Plastic pieces > 2.5cm were most abundant in the winter survey. Fishing line was unusually common in the summer survey.

Other glass items were recorded more often, but problems reliably removing these led to their exclusion from the analysis. It was not possible to guarantee that we were not recounting items that had been included in the last survey.

Rank	2014 average	N/km	Winter	N/km	Spring	N/km	Summer	N/km	Autumn	N/km
1	Plastic/polystyrene pieces > 2.5 cm	**875**	Plastic/polystyrene pieces < 2.5 cm	**1,952**	String and cord diameter < 1 cm	**758**	String and cord (diameter < 1cm)	**664**	Plastic/polystyrene pieces > 2.5 cm	**487**
2	Plastic/polystyrene pieces < 2.5 cm	**719**	Plastic/polystyrene pieces > 2.5 cm	**1,751**	Plastic/polystyrene pieces > 2.5 cm	**691**	Plastic/polystyrene pieces > 2.5 cm	**569**	Drinks (bottles/ containers/drums)	**352**
3	String and cord (diameter < 1 cm)	**555**	Caps/lids	**771**	Plastic/polystyrene pieces < 2.5 cm	**433**	Plastic/polystyrene pieces < 2.5 cm	**339**	String and cord (diameter < 1cm)	**289**
4	Drinks (bottles/ containers/drums)	**425**	Drinks (bottles/ containers/drums)	**689**	Drinks (bottles/ containers/drums)	**429**	Drinks (bottles/ containers/drums)	**230**	Drink cans	**184**
5	Caps/lids	**287**	Cotton bud sticks	**560**	Rope (diameter > 1 cm)	**200**	Crisp/sweet/lolly/ sandwich wrappers	**214**	Rope (diameter > 1cm)	**166**
6	Crisp/sweet/lolly/ sandwich wrappers	**200**	String and cord (diameter < 1 cm)	**509**	Fishing line (anglers)	**198**	Rope (diameter > 1cm)	**147**	Plastic/polystyrene pieces < 2.5 cm	**151**
7	Rope (diameter > 1 cm)	**196**	Crisp/sweet/lolly/ sandwich wrappers	**296**	Drink cans	**171**	Construction material (tiles)	**141**	Food (fast food pots/tubs/sachets)	**144**
8	Cotton bud sticks	**180**	Rope (diameter > 1 cm)	**270**	Caps/lids	**169**	Drink cans	**134**	Crisp/sweet/lolly/ sandwich wrappers	**121**
9	Drink cans	**169**	Shotgun cartridges	**193**	Gloves (heavy duty)	**169**	Caps/lids	**126**	Tangled fishing nets/ rope/cord/string	**83**
10	Food (fast food pots/tubs/sachets)	**118**	Drink cans	**186**	Crisp/sweet/lolly/ sandwich wrappers	**169**	Fishing net and net pieces < 50 cm	**124**	Caps/lids	**81**
	All others	**1,608**		**1,746**		**1,639**		**1,641**		**987**
Total number of items per km		**5,332**		**8,923**		**5,026**		**4,330**		**3,047**

Comparison of different survey areas

The survey beaches were chosen to allow a focus on three areas – beaches on the north coast; beaches on the east coast; and beaches next to fishing harbours.

The particular characteristics of the three areas within the survey are very different. The graphic shows just how much more litter is observed around harbour beaches than in the other study areas.

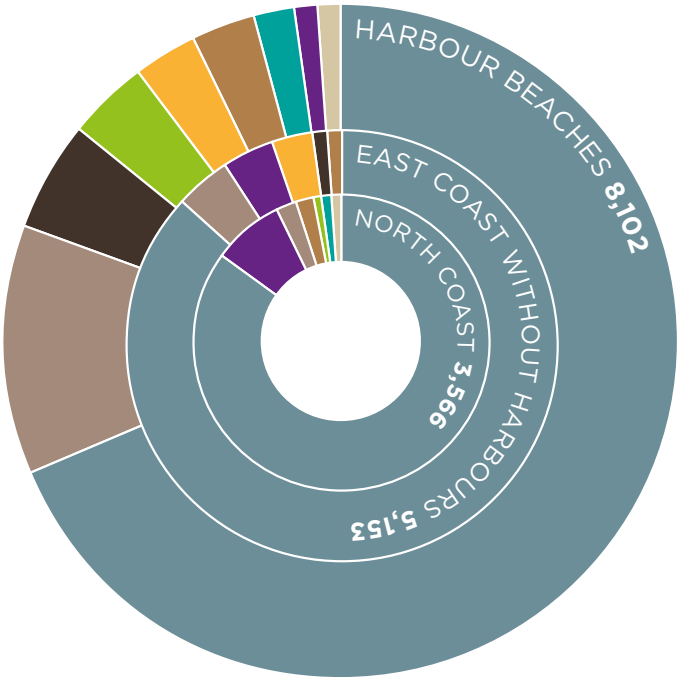
The circumference of each ring indicates the number of items/km observed in the three survey areas. Over a third more items/km were observed on harbour beaches in 2014 than on east coast beaches and more than double the amount found on north coast beaches.

The colouring of the sections on each ring indicates the percentage of each material. Plastic is the dominant material. Pieces of plastic greater than 2.5cm in length were observed almost 1,000 times per kilometre on east coast beaches. On the north coast it was much lower, but still almost 600 items/km.

See **Table 4** for greater detail.

Comparison of the survey areas

The size of the circles are relative to the items of litter observed per km.



Ardglass beach in County Down, an example of a beach by a fishing harbour. Industrial gloves, such as these on the left, were the most common large items of litter observed, numbering on average 42 per kilometre.

Table 4: Comparison of different survey areas

Beaches adjacent to fishing harbours had an average of 8,102 litter items/km, 993 of which were bits of string and cord. Over 1,000 pieces of plastic/polystyrene > 2.5cm per kilometre were observed on non-harbour beaches.

Rank	2014 average	N/km	East coast (all beaches)	N/km	East coast (no harbours)	N/km	Harbour beaches	N/km	North coast	N/km
1	Plastic/polystyrene pieces > 2.5 cm	**875**	Plastic/polystyrene pieces > 2.5 cm	**986**	Plastic/polystyrene pieces > 2.5 cm	**1,029**	String and cord (diameter < 1 cm)	**993**	Plastic/polystyrene pieces < 2.5 cm	**943**
2	Plastic/polystyrene pieces < 2.5 cm	**719**	Plastic/polystyrene pieces < 2.5 cm	**629**	Plastic/polystyrene pieces < 2.5 cm	**716**	Plastic/polystyrene pieces > 2.5 cm	**886**	Plastic/polystyrene pieces > 2.5 cm	**598**
3	String and cord (diameter < 1 cm)	**555**	String and cord (diameter < 1 cm)	**575**	Drinks (bottles/ containers/drums)	**546**	Drinks (bottles/ containers/drums)	**635**	String and cord (diameter < 1 cm)	**506**
4	Drinks (bottles/ containers/drums)	**425**	Drinks (bottles/ containers/drums)	**573**	String and cord (diameter < 1 cm)	**396**	Crisp/sweet/lolly/ sandwich wrappers	**443**	Cotton bud sticks	**293**
5	Caps/lids	**287**	Caps/lids	**320**	Caps/lids	**359**	Drink cans	**428**	Caps/lids	**206**
6	Crisp/sweet/lolly/ sandwich wrappers	**200**	Crisp/sweet/lolly/ sandwich wrappers	**248**	Rope (diameter > 1 cm)	**184**	Plastic/polystyrene pieces < 2.5 cm	**427**	Rope (diameter > 1 cm)	**111**
7	Rope (diameter > 1 cm)	**196**	Rope (diameter > 1 cm)	**230**	Crisp/sweet/lolly/ sandwich wrappers	**164**	Rope (diameter > 1cm)	**337**	Fishing line (anglers)	**107**
8	Cotton bud sticks	**180**	Drink cans	**226**	Cotton bud sticks	**163**	Other rubber pieces	**303**	Shotgun cartridges	**102**
9	Drink cans	**169**	Gloves (heavy duty)	**157**	Drink cans	**139**	Construction material (tiles)	**288**	Crisp/sweet/lolly/ sandwich wrappers	**81**
10	Food (fast food pots/tubs/sachets)	**118**	Food (fast food pots/tubs/sachets)	**146**	Tangled fishing nets/ rope/cord/string	**124**	Gloves (heavy duty)	**258**	Plastic bag ends	**60**
	All others	**1,608**		**1950**		**1,334**		**3,107**		**560**
Total number of items per km		**5,332**		**6,038**		**5,153**		**8,102**		**3,566**

Table 5: Percentages of each material type present in the litter in the four beach groups

This table shows the differing levels of and types of litter on beaches in different areas. The east coast without harbours and the north coast have almost the same percentage of plastic litter. While harbour beaches had the lowest percentage of plastic litter, the higher number of items observed meant that plastic litter was more abundant on these beaches than in the other groups.

Material	All beaches (%)	N/km	East coast without harbours (%)	N/km	Harbour beaches (%)	N/km	North coast (%)	N/km
Plastic	80	**4,263**	86	**4,423**	68	**5,509**	85	**3,048**
Rubber	2	**121**	1	**52**	5	**433**	0	**8**
Cloth	3	**134**	3	**164**	3	**218**	0	**18**
Wood	2	**96**	1	**49**	3	**260**	2	**56**
Paper	1	**36**	0	**19**	1	**98**	1	**18**
Metal	6	**322**	4	**198**	12	**968**	2	**56**
Glass	1	**52**	0	**18**	2	**176**	1	**19**
Pottery/ceramic	2	**84**	0	**14**	4	**315**	1	**33**
Sanitary	4	**213**	4	**211**	1	**99**	8	**301**
Medical	0	**5**	0	**1**	0	**19**	0	**1**
Faeces	0	**6**	0	**5**	0	**8**	0	**8**
Total number of items per km		**5,332**		**5,153**		**8,102**		**3,566**

Table 6 shows that some beaches in particular are heavily burdened with litter. Of the fourteen litter types shown, Ballyhornan had the highest levels of seven of them during 2014. Tyrella Beach, which is 15km south from Ardglass along the coast, is in the top three most littered beaches for ten of the litter types. Although the stretch of Tyrella beach surveyed was several hundred metres from the designated bathing area, this illustrates the significant resources required to maintain this beach's Blue Flag status by the beach operator Newry, Mourne and Down District Council. Although all the beaches listed need to be cleansed several times per year, this survey has identified a number of beaches which require much more frequent cleaning in order to improve the visitor's experience.

This metal drinking can has a design dating back to the 1980s illustrating how long it takes for certain litter types to decay in the natural environment.

Table 6: Average number per kilometre of selected litter types at each beach in 2014

The beach with the first, second and third highest load of each type of litter is highlighted. Ardglass, Ballyhornan and Tyrella are in the top three in most categories. Tangled nets and line, plastic bags, and balloons and their string have all been associated with harm to marine life.

Rank	Item	2014 average N/km	Ardglass	Ballyhornan	Balls Point	Ballywalter	Cloughey	Drains Bay	Hazelbank	Kilkeel North	Portavogie	Rathlin	Rostrevor	Runkerry	Tyrella	White Park Bay
1	Plastic/polystyrene pieces > 2.5 cm	875	1,075	**4,853**	123	410	165	238	23	1,050	533	473	390	540	**1,123**	**1,255**
2	Plastic/polystyrene pieces < 2.5 cm	719	538	**3,495**	145	395	63	15	3	338	405	198	305	690	**735**	**2,740**
3	String and cord (diameter < 1 cm)	555	**2,483**	1,000	13	98	348	5	3	228	268	**1,558**	38	65	**1,280**	390
4	Drinks (bottles/ containers/drums)	425	220	**1,938**	78	13	83	20	20	**1,433**	253	53	550	48	**1,198**	48
5	Caps/lids	287	173	**1,938**	30	70	108	3	8	215	**295**	165	115	103	275	**525**
6	Rope (diameter > 1 cm)	200	380	**543**	5	38	123	3	8	**410**	220	128	13	25	**563**	288
7	Crisp/sweet/lolly/ sandwich wrappers	196	**745**	**220**	40	78	123	13	15	148	435	143	205	30	**495**	110
8	Cotton bud sticks	180	85	**750**	33	**283**	35	5	8	0	123	123	15	20	48	**998**
9	Drink cans	169	**373**	**523**	50	25	25	38	35	**558**	353	20	125	15	205	23
10	Food (fast food pots/tubs/sachets)	118	**298**	**375**	23	35	15	43	5	**288**	163	33	68	85	175	48
11	Gloves (industrial)	112	178	**395**	3	8	13	0	0	**515**	83	0	13	0	**365**	0
13	Tangled fishing nets/ rope/cord/string	86	**138**	**555**	5	35	25	53	8	100	55	18	5	5	**188**	20
14	Bags (including supermarket)	81	**213**	33	48	30	60	0	35	**85**	60	23	23	15	**498**	8
39	Balloons/ balloon string	15	**50**	**60**	0	15	20	0	0	3	**25**	0	3	5	**25**	10
	All others	1,313	3,825	3,375	485	228	403	393	250	3,905	995	1,190	438	255	1,945	708
Total number of items per km		**5,331**	**10,770**	**20,050**	**1,078**	**1,758**	**1,605**	**825**	**418**	**9,273**	**4,263**	**4,120**	**2,303**	**1,900**	**9,115**	**7,168**

KEY	1st	2nd	3rd	highest load of each type of litter

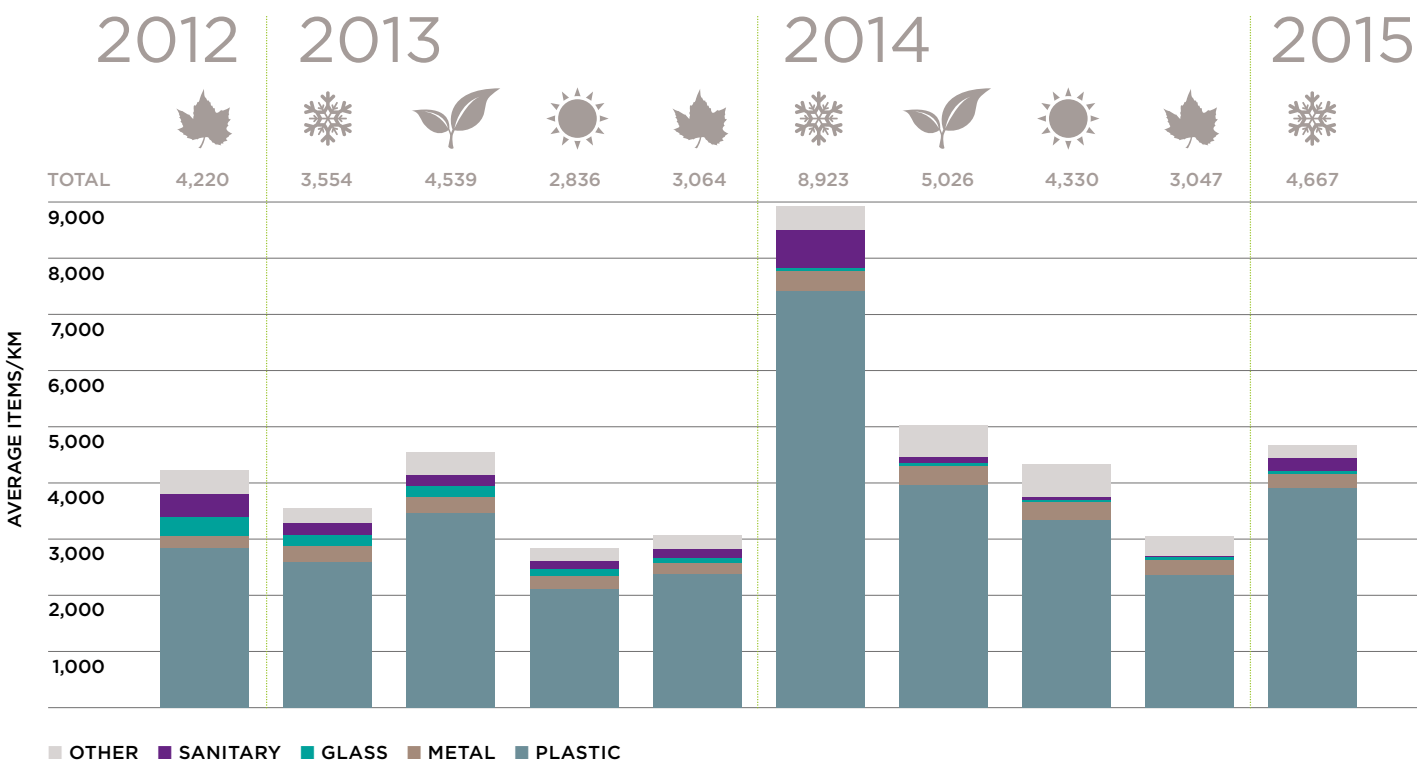
Comparison of surveys between September 2012 and January 2015

The first graph below shows the variation in the volume of litter observed between survey windows. Across the ten windows it ranged from 2,836 items/km to 8,923 items/km. The average figure was 4,421 items/km. The winter 2014 figures, following severe storms, suggest there is a significant reservoir of litter contained within our seas which can be deposited on the shore when conditions are right. These storm events may not be common but they can have significant effects on the figures.

Note the variability in the figures for each season. In the second graph, which comprises the same data condensed into the four seasonal windows, we see that winter generally has the most litter observed while summer and autumn are nearly equal and are much lower, even though we might expect most land-based litter to be deposited during these seasons.

Comparison of the composition and volume of litter observed in each survey

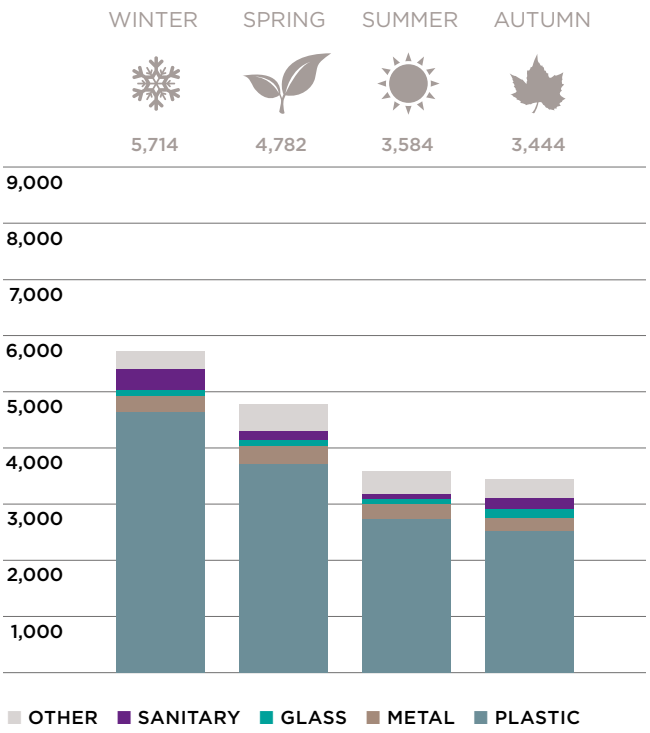
This graph shows all the surveys from September 2012 to January 2015. The winter 2014 survey shows that the storms at the end of December 2013 deposited significantly greater amounts of litter than more usual winds and tides.



The graphs also show that the vast majority of the litter observed was plastic, with an average of 79.8% of all litter items being classed as plastic. In addition, both cotton buds and much of the clothing observed were made of plastic, so the actual figure is closer to 83%.

Comparison of seasonal variation

Utilising the same data condensed into the four seasonal windows, generally most litter is observed in winter.



Information about litter is collected by trained surveyors four times per year, with the data averaged to give the figures quoted.

Marine litter currently poses a dire, vast and growing threat to the marine and coastal environment.

Most marine litter consists of material that degrades slowly, if at all, so a continuous input of large quantities of these items results in a gradual build-up in the marine and coastal environment. This negative trend has been confirmed by a number of studies in various regions, clearly indicating that the situation with regard to marine litter is continuously getting worse.

Source: www.unep.org

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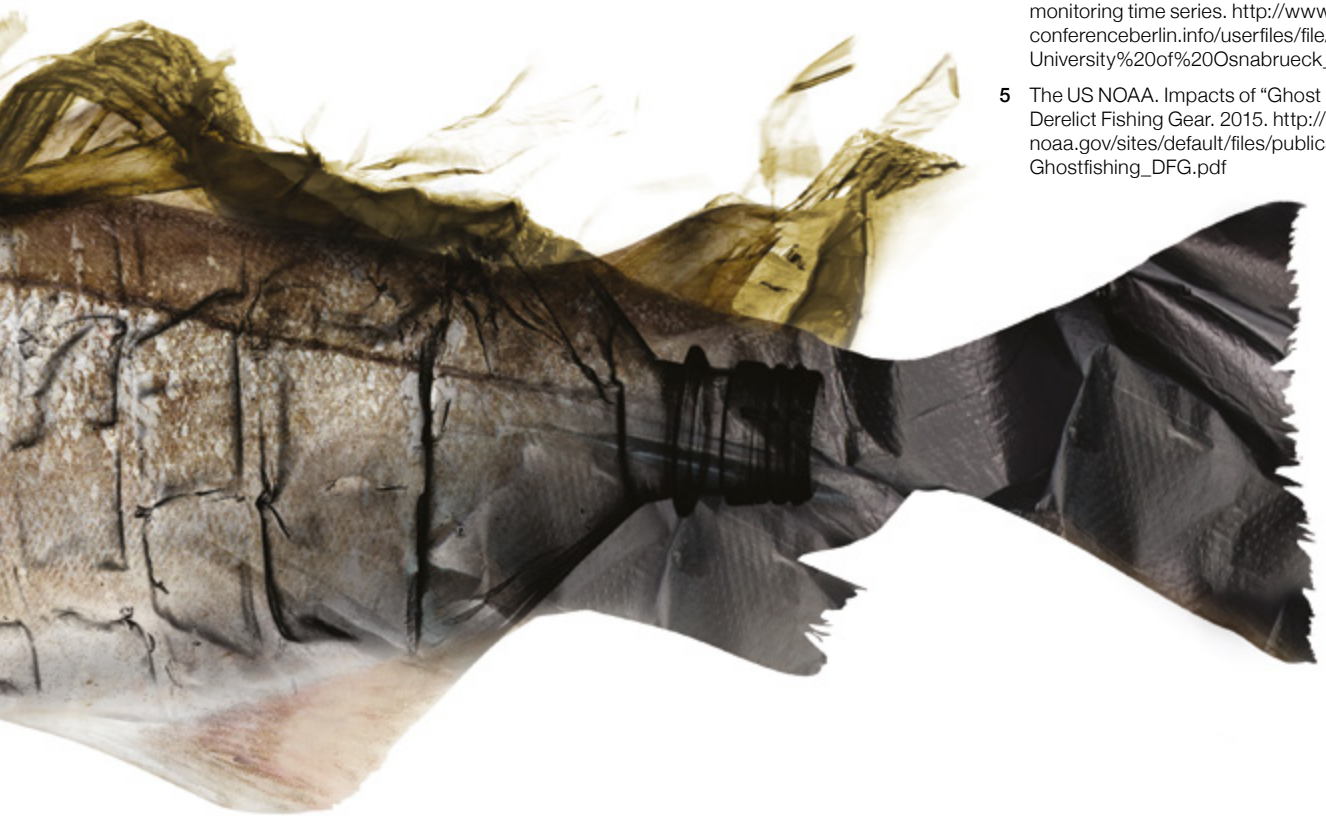

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